10

FIGURE 1

40   +VB   20A   CB: DC BLOCK CAPACITOR
                                                             L & C OUTPUT FILTER
17A   R . LOAD/ANTENNA
      Q1   Q1 & Q2: POWER DEVICES
                                                             Q1 & D2: DIODES
18A   s

                                        CB   L

                            22   42   44   C

17B   Q2   43   45   24

18B   s

                    D2
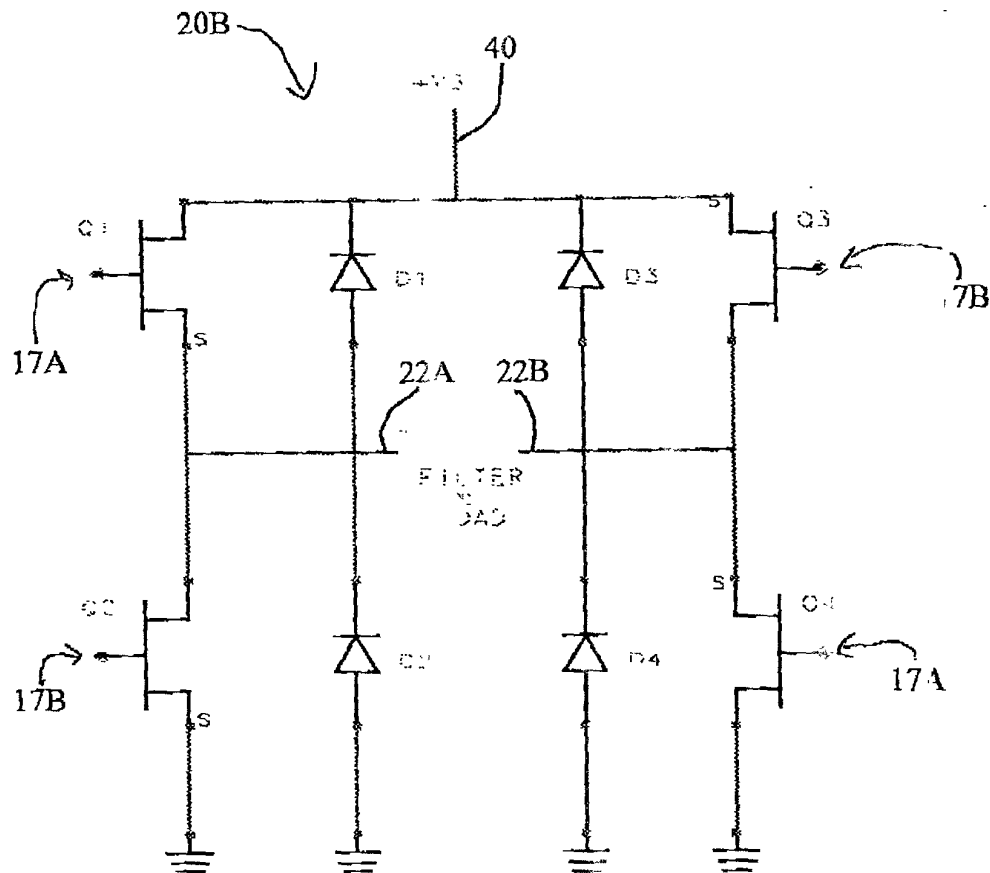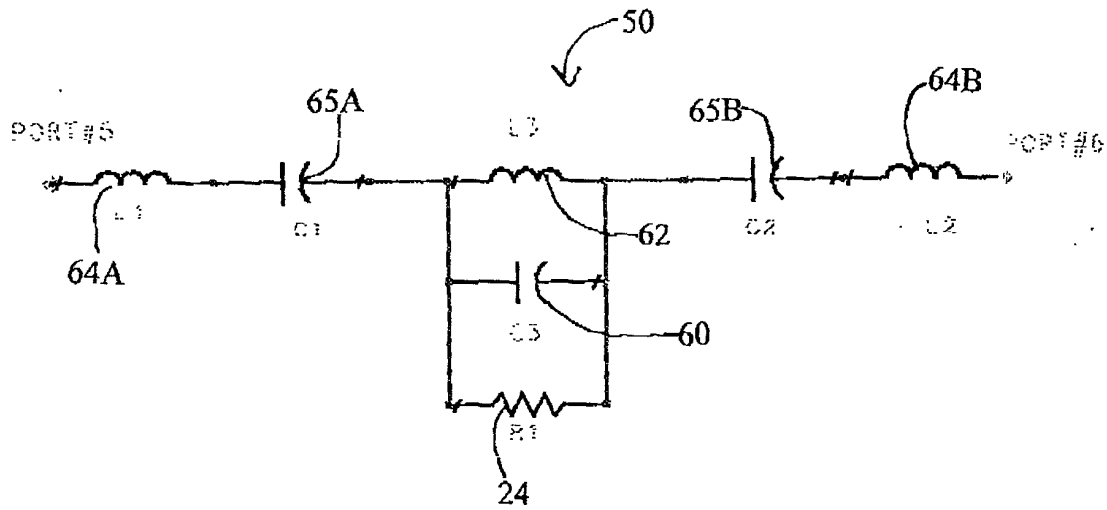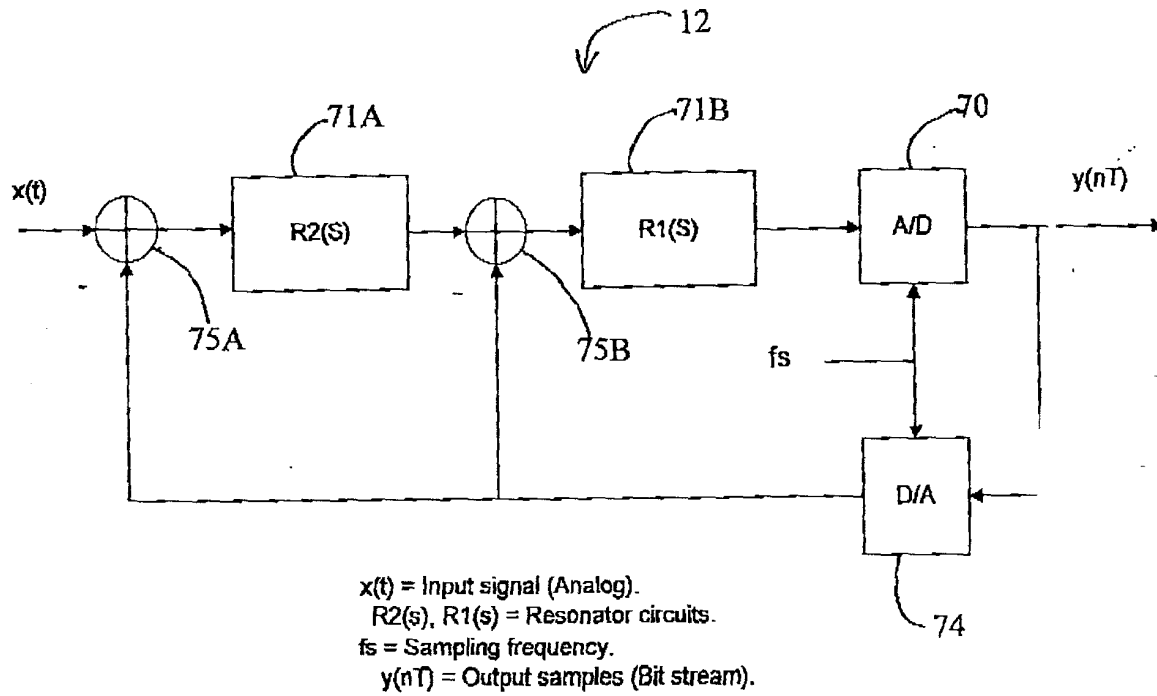
FIG. 2. CLASS S AMPLIFIER WITH 2 DEVICES.
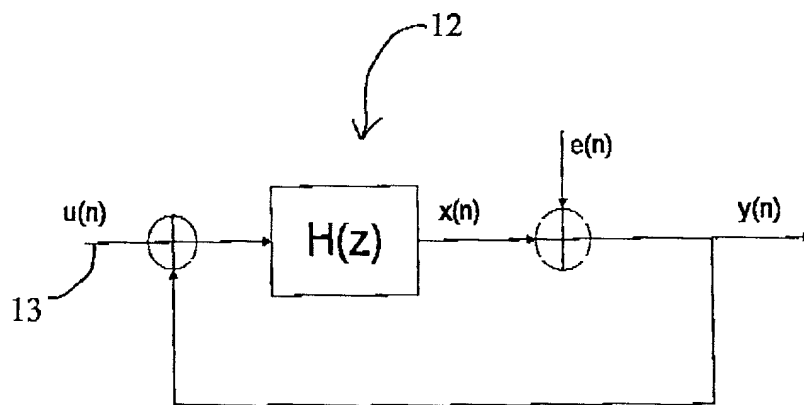
FIG. 3. CLASS S AMPLIFIER WITH 4 DEVICES. (H CONFIGURATION)

FIG. 4. CLASS S AMPLIFIER: OUTPUT FILTER AND LOAD SCHEMATIC

12

71A   71B   70   y(nT)

x(t)

| R2(S) | | R1(S) | | A/D |

75A   75B   fs

| D/A |

74

x(t) = Input signal (Analog).
R2(s), R1(s) = Resonator circuits.
fs = Sampling frequency.
y(nT) = Output samples (Bit stream).

**FIG. 5. CONTINUOUS TIME BANDPASS DELTA SIGMA MODULATOR USING
DOUBLE FEEDBACK LOOP.**

u(n)= Input signal
x(n)= Input to Quantizer
e(n)= Quantization noise as additive noise non-correlated with input
y(n)= Output bit stream

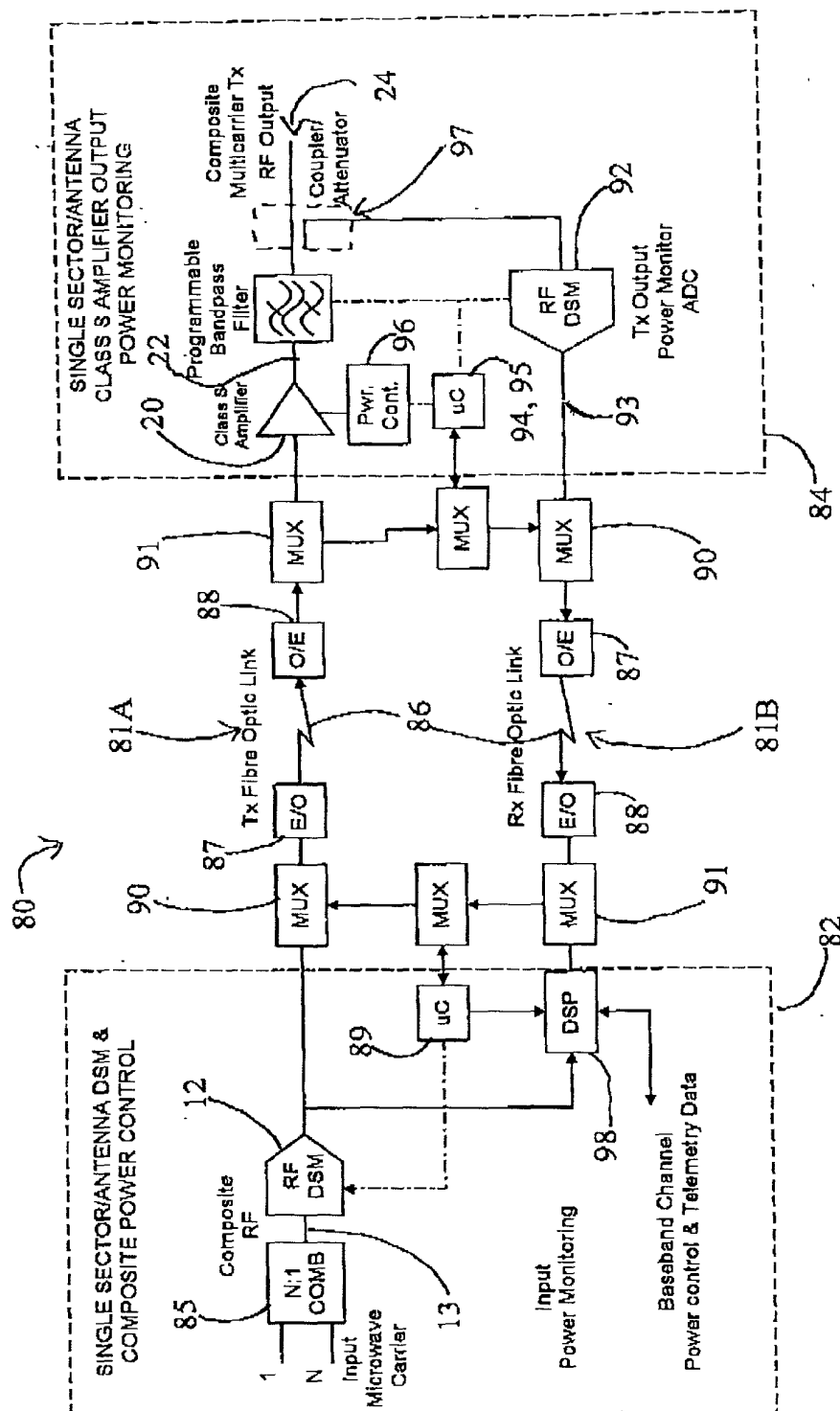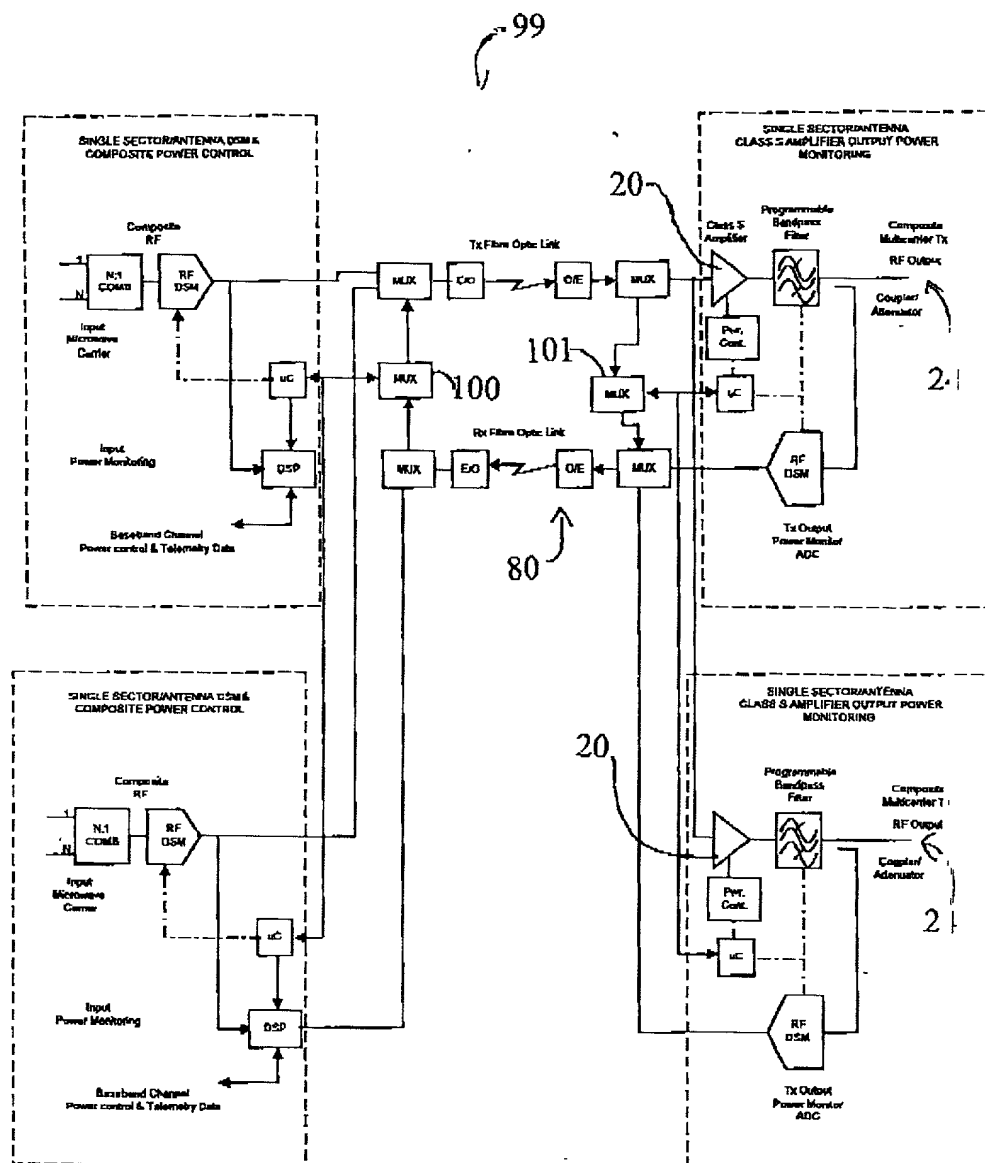**FIG. 6. SIMPLIFIED DISCRETE EQUIVALENT OF DELTA SIGMA MODULATOF .**

SINGLE SECTOR/ANTENNA
CLASS S AMPLIFIER OUTPUT
POWER MONITORING

Composite
Multicarrier Tx
RF Output

(Coupler/
Attenuator)   24

Programmable
Bandpass
Filter   97

22

Class S
Amplifier   RF
20   DSM   92

Pwr.
Cont.   96

uC   Tx Output
94, 95   Power Monitor
          ADC
          93

MUX   91

MUX

MUX   90

84

O/E   88

Tx Fibre Optic Link
81A

86

Rx Fibre Optic Link
81B

O/E   87

E/O   87

E/O   88

MUX   90

MUX

MUX   91

80

uC   89

DSP   82

SINGLE SECTOR/ANTENNA DSM &
COMPOSITE POWER CONTROL

Composite
RF   RF
85   DSM   12

N:1
COMB   13

1
N
Input
Microwave
Carrier

Input
Power Monitoring

Baseband Channel
98   Power control & Telemetry Data

FIGURE 7A

FIGURE 7B